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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/577,901	02/22/2007	Arata Tomita	Q94729	5424
23373	7590	03/26/2010	EXAMINER	
SUGHRUE MION, PLLC			MAKI, STEVEN D	
2100 PENNSYLVANIA AVENUE, N.W.				
SUITE 800			ART UNIT	PAPER NUMBER
WASHINGTON, DC 20037			1791	
			NOTIFICATION DATE	DELIVERY MODE
			03/26/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

sughrue@sughrue.com
PPROCESSING@SUGHRUE.COM
USPTO@SUGHRUE.COM

Office Action Summary	Application No. 10/577,901	Applicant(s) TOMITA, ARATA
	Examiner Steven D. Maki	Art Unit 1791

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If no period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on ____.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) Claim(s) ____ is/are allowed.
- 6) Claim(s) 1-4 is/are rejected.
- 7) Claim(s) ____ is/are objected to.
- 8) Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on ____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. ____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08) _____
Paper No(s)/Mail Date 050106, 042409
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) Notice of Informal Patent Application
- 6) Other: _____

1) The subject matter of this application ($\alpha_2 < \beta_2$ and $\alpha_1 > \beta_1$ for one region and $\alpha_2 > \beta_2$ and $\alpha_1 < \beta_1$ for another region as in claims 3 and 4) admits of illustration by a drawing to facilitate understanding of the invention. Applicant is required to furnish a drawing under 37 CFR 1.81(c). No new matter may be introduced in the required drawing. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d).

2) The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3) Claims 3 and 4 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

As to claims 3 and 4, the subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention is the subject matter of $\alpha_2 < \beta_2$ and $\alpha_1 > \beta_1$ for one region and $\alpha_2 > \beta_2$ and $\alpha_1 < \beta_1$ for another region. The disclosure shows a groove cross section wherein $\alpha_1 < \beta_1$ and $\alpha_2 < \beta_2$. See Figure 3(c) and Figure 3 (d). However, the disclosure fails to contain an illustration of $\alpha_1 > \beta_1$ for one region and $\alpha_2 > \beta_2$ for another region. In view of the description of angle α and

angle β on lines 2-19 of page 12 of the specification, it appears that angle α is always acute and angle β is always obtuse such the relationships of $\alpha_1 > \beta_1$ and $\alpha_2 > \beta_2$ cannot be satisfied. This is true even if the groove wall contains an undercut portion because angle β is measured with respect to the part of the perpendicular line above the tread surface. **The specification fails to explain how to configure the walls and bottom of groove such that $\alpha_1 > \beta_1$ for one region and $\alpha_2 > \beta_2$ for another region.** Since the specification fails to adequately describe a groove in which, $\alpha_1 > \beta_1$ for one region and $\alpha_2 > \beta_2$ for another region, the specification fails to enable the subject matter of $\alpha_2 < \beta_2$ and $\alpha_1 > \beta_1$ for one region and $\alpha_2 > \beta_2$ and $\alpha_1 < \beta_1$.

4) The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5) Claims 3 and 4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 3 is confusing and indefinite because the subject matter at lines 13 and 14 (the last two lines of claim 13) cannot be satisfied when angles α_1 , β_1 , α_2 and β_2 are defined as set forth on lines 2-13 of claim 13.

Claim 4 is indefinite for the same reason given for claim 3.

6) The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Montagne (zigzag upper groove edges)

7) **Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Montagne (US 3,664,402).**

Claims 1 and 2 are anticipated by Montagne's radial (pneumatic) heavy duty tire having the tread as shown in Figures 1-4. The claimed "groove deepest portions" read on the flat groove bottom of Montagne's zigzag groove wherein positions of the flat groove bottom vary in a predetermined cycle along the circumferential direction as shown in Figure 1. The claimed "groove bottom surface" reads on the groove sidewall surfaces 12 and 13 as shown in Figures 2-4. It is noted that applicant's "groove bottom surface" can extend from the "groove deepest portion" to a position close to the tread surface. See Figure 3c of applicant's disclosure. Claims 1 and 2 fail to require joining the groove bottom surface to vertical groove sidewalls. In other words, claims 1 and 2 read on and fail to exclude the "groove bottom surface" extending from the "groove deepest portion" to the upper edge of the groove at the tread surface. Claims 1 and 2 fail to require the cycle to vary in a stepwise manner. It is noted that the groove deepest portion continuously varies in applicant's Figure 7 embodiment. As to claim 2, Montagne's groove inherently satisfies $S' \geq 0.45S$ since (a) the groove has a flat groove bottom and (b) the groove sidewall surfaces 12, 13 are inclined at angles of 28 degrees and 3 degrees (Figure 2), 16 degrees and 16 degrees (Figure 3) and 3 degrees and 28 degrees (Figure 3).

Japan 708 (linear upper groove edges)

8) **Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Japan 708 (JP 09-011708).**

Claims 1 and 2 are anticipated by Japan 708's pneumatic tire having the tread as shown in Figures 1-3, which are described in the machine translation. The claimed "groove deepest portions" read on the flat bottom of Japan 708's groove, which varies along the circumferential direction as shown Figure 1. The claimed "groove bottom surface" reads on the groove sidewalls 3a. In view of the flat groove bottom and the angle of the sidewall 3a being 0-45 degrees with respect to the radial direction (Figure 3, paragraph 11 of machine translation), Japan 708's groove inherently satisfies $S' \geq 0.45S$.

Japan 203 (vertical walls at upper region of groove)

9) **Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Japan 203 (JP 02-212203).**

Claims 1 and 2 are anticipated by Japan 203's pneumatic tire having a tread as shown in Figures 1 and 4. Since the abstract describes "at least one primary groove", Japan 203 is considered to disclose and contemplate "circumferential grooves" defined by the Figure 4 embodiment. In Figure 4, the claimed "groove deepest portions" reads on the curved bottom shown in Figure 4 and the claimed "groove bottom surface" reads on the surface 12b shown in Figure 4. When Figures 1-4 and the abstract are considered as a whole, one of ordinary skill in the art would readily understand that the curved bottom surface and surface 12b vary in a predetermined cycle along the

circumferential direction. In view of the shape of the groove cross section shown in

Figure 4, Japan 203's groove inherently satisfies $S' \geq 0.45S$.

Remarks

- 10) The remaining references are of interest.
- 11) No claim is allowed.
- 12) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven D. Maki whose telephone number is (571) 272-1221. The examiner can normally be reached on Mon. - Fri. 8:30 AM - 5:00 PM.
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Steven D. Maki/
Primary Examiner, Art Unit 1791

Steven D. Maki
March 20, 2010